

CLAIMS

SUB
B1

1. A method of treating a loose skin surface overlying a collagen tissue site, comprising:
identifying a person suspected of having a the loose skin surface;
providing an energy source with an energy delivery surface;
positioning the energy delivery surface on the loose skin surface;
creating a reverse thermal gradient, wherein a temperature of the skin surface is less than a temperature of the collagen containing tissue;
delivering a sufficient amount of energy through the skin surface to contract at least a portion of the collagen containing tissue with controlled cell necrosis in the skin surface; and
tightening the loose skin surface.

SUB C2

2. The method of claim 1, wherein a sufficient amount of energy is delivered through the loose skin surface without creating a substantial cell necrosis in the loose skin surface.

3. The method of claim 1, wherein a sufficient amount of energy is delivered through the loose skin surface with a reduced cell necrosis in a skin layer.

SUB B2

4. The method of claim 1, wherein a sufficient amount of energy is delivered through the loose skin surface and smoothen the loose skin surface.

5. The method of claim 1, wherein a sufficient amount of energy is delivered through the loose skin surface and improve a contour of the loose skin surface.

1 6. The method of claim 1, wherein a sufficient amount of energy is
2 delivered through the loose skin surface and reduce a scarring of the loose skin
3 surface.

1 SUB B2 7. The method of claim 1, wherein a sufficient amount of energy is
2 delivered through the loose skin surface and reduce a wrinkling of the loose skin
3 surface.

1 8. The method of claim 1, wherein the energy source is an RF energy
2 source.
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1 9. The method of claim 8, further comprising:
2 an RF electrode coupled to the RF energy source, the RF electrode
3 including an RF energy delivery surface positionable on the loose skin surface.

1 10. The method of claim 9, further comprising:
2 a source of electrolytic media coupled to RF electrode.
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1 11. The method of claim 10, wherein the electrolytic media is an
2 electrolytic solution.
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1 12. The method of claim 10, wherein the electrolytic media is an
2 electrolytic gel.
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1 13. The method of claim 1, wherein the energy source is a light
2 source.
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1 SUB B4 14. The method of claim 11, wherein the light source is a coherent
2 light source.
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1 15. The method of claim 12, further comprising:
2 a coherent light delivery device configured to be coupled to the coherent
3 light source.

1 16. The method of claim 11, wherein the light source is an incoherent
2 light source.

1 17. The method of claim 1, wherein the energy source is a microwave
2 source.

1 18. The method of claim 17, wherein the energy source is an
2 ultrasound source.

1 19. The method of claim 1, wherein the collagen containing tissue is
2 partially denatured by cleaving heat labile cross-links of collagen molecules.

1 20. The method of claim 1, further comprising:
2 a cooling medium configured to create a cooling of the loose skin surface.

1 21. The method of claim 1, wherein the collagen containing tissue is in
2 a subdermal layer.

1 22. The method of claim 1, wherein the collagen containing tissue is in
2 a deep dermal layer.

1 23. The method of claim 1, wherein the collagen containing tissue is in
2 a subcutaneous layer.

1 24. The method of claim 1, wherein the collagen containing tissue is in
2 facial and muscle tissue.

1 25. The method of claim 1, wherein the temperature of the collagen
2 containing tissue does not exceed 80 degrees C.

1 26. The method of claim 1, wherein the temperature of the collagen
2 containing tissue does not exceed 75 degrees C.

1 27. The method of claim 1, wherein the temperature of the collagen
2 containing tissue does not exceed 70 degrees C.

1 28. An apparatus for applying energy to a loose skin surface,
2 comprising:

3 an identification means for detecting a loose skin surface;

4 an electrolytic media means;

5 an electrolytic media delivery means adapted to receive the electrolytic

6 media and release the electrolytic media to the loose skin surface;

7 an RF electrode means coupled to the electrolytic media means, wherein
8 the electrolytic media means delivers energy to the loose skin surface to create a
9 controlled cell necrosis and tighten the loose skin surface.

1 29. The apparatus of claim 1, wherein the electrolytic media is an
2 electrolytic solution.

1 30. The apparatus of claim 1, wherein the electrolytic media is an
2 electrolytic gel.

1 31. The apparatus of claim 28, wherein the RF electrode means is
2 separated from the loose skin surface.

1 32. The apparatus of claim 28, wherein the RF electrode means is
2 positioned in an interior of the electrolytic media delivery means.

1 33. The apparatus of claim 28, wherein the RF electrode means is
2 positioned on an exterior surface of the electrolytic media delivery means.

1 34. The apparatus of claim 28, wherein the electrolytic media means
2 receives sufficient energy from the RF electrode means to create a contraction of
3 collagen in the skin.

1 35. The apparatus of claim 28, wherein the electrolytic media means
2 receives sufficient energy from the RF electrode means to deliver energy through
3 a papillary dermis layer.

1 36. The apparatus of claim 28, wherein the electrolytic media means
2 receives sufficient energy from the RF electrode means to supply energy through a
3 reticular dermis layer of the skin.

1 37. The apparatus of claim 28, wherein the electrolytic media means
2 receives sufficient energy from the RF electrode means to supply energy through a
3 subcutaneous layer of the skin and an underlying soft tissue.

1 38. The apparatus of claim 28, wherein the RF electrode means is
2 coupled to an RF energy source.

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39. The apparatus of claim 28, further comprising:
a sensor means coupled to loose skin surface.

40. The apparatus of claim 28, further comprising:
a feedback control means coupled to the sensor means and to an RF
energy source means.

41. ✓ A method for treating skin, comprising:
identifying a person suspected of having a loose skin surface;
providing an apparatus for applying energy to the loose skin surface, the
apparatus including an electrolytic media, a member, and an RF electrode;
transferring energy from the RF electrode to the electrolytic media to
create an energy delivery electrolytic media;
releasing the energy delivery electrolytic media from the member to the
loose skin surface;
treating the loose skin surface with energy from the energy delivery
electrolytic media; and
tightening the loose skin surface.

42. The method of claim 41, wherein a sufficient amount of energy is
delivered through the loose skin surface without creating a substantial cell
necrosis in the loose skin surface.

43. The method of claim 41, wherein a sufficient amount of energy is
delivered through the loose skin surface with a reduced cell necrosis in a skin
layer.

44. The apparatus of claim 41, wherein the electrolytic media is an
electrolytic solution.

1 45. The apparatus of claim 41, wherein the electrolytic media is an
2 electrolytic gel.

1 46. The method of claim 41, wherein energy from the energy delivery
2 electrolytic media to the loose skin surface creates a controlled cell necrosis.

1 47. The method of claim 41, wherein the energy delivery electrolytic
2 media creates a tightening of the skin.

1 48. The method of claim 41, wherein the energy delivery electrolytic
2 media creates a tightening of a subcutaneous tissue.

1 49. The method of claim 41, wherein the energy delivery electrolytic
2 media receives sufficient energy from the RF electrode to create a controlled cell
3 necrosis of the loose skin surface.

1 50. The method of claim 41, wherein the energy delivery electrolytic
2 media receives sufficient energy from the RF electrode to create a controlled zone
3 of cell necrosis of the loose skin surface.

1 51. The method of claim 41, wherein the energy delivery electrolytic
2 media receives sufficient energy from the RF electrode to create a controlled zone
3 of collagen contraction of a dermis and fibrous septae of a subcutaneous tissue.

1 52. The method of claim 41, wherein the energy delivery electrolytic
2 media receives sufficient energy from the RF electrode to create a controlled zone
3 of loose skin surface ablation.

1 53. The method of claim 41, wherein the energy delivery electrolytic
2 media receives sufficient energy from the RF electrode to create a controlled zone
3 of skin tightening.

1 54. The method of claim 41, wherein the energy delivery electrolytic
2 media receives sufficient energy from the RF electrode to create a controlled zone
3 of subcutaneous tightening.

1 55. The method of claim 41, wherein the electrolytic media receives
2 sufficient energy from the RF electrode to create a contraction of collagen in the
3 skin.

1 56. The method of claim 41, wherein the electrolytic media receives
2 sufficient energy from the RF electrode to create a controlled cell necrosis of the
3 loose skin surface.

1 57. The method of claim 41, wherein the electrolytic media receives
2 sufficient energy from the RF electrode to supply energy through a papillary
3 dermis layer.

1 58. The method of claim 41, wherein the electrolytic media receives
2 sufficient energy from the RF electrode to supply energy through a reticular
3 dermis layer of the skin.

1 59. The method of claim 41, wherein the electrolytic media receives
2 sufficient energy from the RF electrode to supply energy through a subcutaneous
3 layer and an underlying soft tissue.

1 60. The method of claim 41, wherein the RF electrode receives a

2 controlled delivery of energy from an RF power source.

1 61. The method of claim 41, further comprising:
2 sensing a temperature of the loose skin surface during delivery of the
3 energy delivery electrolytic media to the loose skin surface.

1 62. The method of claim 41, further comprising:
2 sensing a temperature of the loose skin surface after delivery of the energy
3 delivery electrolytic media to the loose skin surface.

1 63. The method of claim 41, further comprising:
2 sensing a temperature of a tissue underlying the loose skin surface during
3 the delivery of the energy delivery electrolytic media to the loose skin surface.

1 64. The method of claim 41, further comprising:
2 sensing a temperature of a tissue underlying the loose skin surface after
3 delivery of the energy delivery electrolytic media to the loose skin surface.

1 65. The method of claim 41, further comprising:
2 sensing an impedance of the loose skin surface during delivery of the
3 energy delivery electrolytic media to the loose skin surface.

1 66. The method of claim 41, further comprising:
2 sensing an impedance of the loose skin surface after delivery of the energy
3 delivery electrolytic media to the loose skin surface.

1 67. The method of claim 41, further comprising:
2 sensing an impedance of a tissue underlying the loose skin surface during
3 the delivery of the energy delivery electrolytic media to the loose skin surface.

